

Remarks

Claims 37-38, 40-41, 43-46, 50, and 52-67 are presented for reconsideration, with claims 37, 54, 55, 56, 66, and 67 being the independent claims. Claims 39, 42, 47-49, and 51 are sought to be cancelled without prejudice or disclaimer of the subject matter therein. Claims 37, 38, 50, 54, and 55 are sought to be amended. Applicants reserve the right to prosecute similar or broader claims, with respect to the amended and cancelled claims, in the future. Claims 56-67 are sought to be added. No new matter has been added, and entry thereof is respectfully requested.

Based on the above amendments and following remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Examiner Interview

The Examiner and his Primary are thanked for their time during interviews on October 16 and 26, 2007 with Applicants' representatives Jason D. Eisenberg and Omar Amin. Agreement was not reached in view of these discussions.

Rejections under 35 U.S.C. § 102 and § 103

Claims 37, 47-49, 54, and 55 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,249,370 to Takeuchi *et al.* ("Takeuchi"). Claims 38-41, 43-46, 50, and 51 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Takeuchi in view of U.S. Patent No. 6,549,694 to Makino *et al.* ("Makino"). Claim 42 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Takeuchi in view of U.S. Patent No. 6,639,722 to Amm *et al.* ("Amm"). Claim 52 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Takeuchi in view of U.S. Patent No. 6,002,154 to Fujita *et al.* ("Fujita"). Claim 53 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Takeuchi. Applicants traverse these rejections.

Independent claims 37, 54, and 55 recite features which distinguish over the applied references. For example, claims 37 and 54 recite, using respective language:

wherein for each of the individual actuators, the mirror is formed so that when the electrode pair is energized the individual actuator moves the mirror with respect to the surface of the substrate, such that the incident wavefront is received by the mirrors normal to the substrate and is modulated across the two dimensional array of mirrors to produce an output wavefront having at least one of a phase shift or an interference pattern in the output wavefront.

Claim 55 recites similar distinguishing features as claims 37 and 54.

Takeuchi is directed to a display device that displays a picture image, which is being used to replace a cathode ray tube or liquid crystal display for color displays. The display device of Takeuchi includes a waveguide a beam towards LEDs/shutter sections, which are actuated into and out of the light path of the in the waveguide. The actuation is done to either reflect or block light traveling along the light path in the waveguide, which controls either outputting or preventing output of the light. This is discussed in more detail in the Remarks in Reply under 37 C.F.R. §1.111 filed April 30, 2007, which are incorporated by reference herein in their entirety.

Takeuchi does teach or suggest "the incident wavefront is received by the mirrors *normal to the substrate* and is *modulated across the two dimensional array of mirrors* to produce an output wavefront having at least one of a phase shift or an interference pattern in the output wavefront," as recited in claims 37, 54, and 55. Instead, the systems of Takeuchi operate to change the direction a beam of light by either reflecting or blocking light traveling along a path in a waveguide. As defined by the IEEE Standard Dictionary of Electrical and Electronics Terms, Fourth Edition, modulation means a controlled variation with time of any property of a wave for the purpose of transferring information. Changing the direction of a beam does not change its properties, e.g., does not add and/or change the information contained within a beam of light. As would be appreciated by those skilled in the relevant art(s), a property of a beam may include, for example, a frequency, a phase, or an amplitude, but does not include the direction in which the beam is traveling. Thus, the systems of Takeuchi do not modulate an incident wavefront at least because reflecting or blocking a beam does not change a property of

the beam and because neither of those operations transfers information. Moreover, as shown in the figures of Takeuchi, e.g., FIG. 24, the actuators of Takeuchi do not receive the beam of light normal to the substrate. For example, as shown in FIG. 24, the beam of light is not received normal to substrate 22.

Therefore, Applicants assert that claims 37, 54, and 55 are patentable over Takeuchi as Takeuchi does not anticipate each and every feature of these claims.

Makino is stated as teaching (a) moving reflective elements in two or four directions, (b) electrodes having electrode sections, (c) adjacent actuator elements having different heights, (d) moving reflective devices $\frac{1}{4}$ of a wavelength, and (e) moving actuator elements with respect to each other to form a desired reflecting configuration. Amm is stated as teaching that actuator elements can be controlled in groups. Fujita is stated as teaching an insulating dissipating heat. Even acquiescing to these statements by the Examiner, which the Applicants do not, none of these additional references are used to teach or suggest the distinguishing features of claims 37, 54, and 55, nor do they teach or suggest the distinguishing features of these claims. Thus, Makino, Amm, and Fujita do not provide the teachings missing from Takeuchi. Thus, claims 37, 54, and 55 are patentable over Takeuchi, Makino, Amm, and Fujita, alone or in combination, as these references cannot be used to establish a prima facie case of obviousness.

Accordingly, Applicants respectfully request that the Examiner find claims 37, 54, and 55 allowable over the applied references. Also, at least based on their dependency to claim 37, Applicants request that the Examiner find all claims depending from these claims allowable, as well as for their additional distinguishing features.

New Claims 56-67

New claims 56-67 recite features that distinguish over the applied references. For example, claim 56 recites, among other features:

a plurality of coupling devices, each made from the actuator material, that are configured to couple respective adjacent ones of the individual actuators, such that, through use of the plurality of coupling devices, movement of one of the respective adjacent ones of the plurality of individual actuators affects movement of other ones of the

respective adjacent ones of the plurality of individual actuators so that they are controlled as a group to form an overall desired reflecting configuration for the group to modulate an incident wavefront..

In regards to a similar feature in the currently pending and rejected claims, the Examiner has explicitly stated in the previous Office Action that Takeuchi does not teach or suggest the similar feature, and rather relies on Amm to cure the deficiencies of Takeuchi.

Amm is directed to a light modulator that includes elongated elements arranged parallel to each other that are suspended above a substrate. *See*, Amm, Abstract. In particular, FIGS. 3A and 3B of Amm illustrate cross-sectional views of blazed grating light valves in non-activated and activated states, respectively. Applicants assert that Amm does not teach or suggest the distinguishing feature of claim 56. On pages 7 and 8 of the Final Office Action, dated July 31, 2007, the Examiner states "[a]lthough the drawing does not explicitly shows the coupling features, the teaching would strongly suggest that such coupling features would have been obvious modifications to one of ordinary skill from the spatial light modulator of Takeuchi et al." However, Applicants are unable to locate any description in Amm that would teach or suggest the distinguishing feature of claim 56 as being obvious modifications to the actuators of Takeuchi. Furthermore, in FIG. 3B, "alternate ones of the elongated elements 24 are moved toward the substrate 22 by applying an electrical bias between the first conductor 30 and the metal reflectors 54 of the alternate ones of the elongated elements 24." *See*, Amm, col. 4, lines 54-58. Thus, individual elongated elements 24 are not coupled together, but rather are each coupled to first conductor 30 and the individual coupling to first conductor 30 is used to move the elongated elements 24. Thus, Applicants assert that claim 56 is patentable over the applied references.

Moreover, Makino and Fujita do not provide the teachings missing the combination of Amm and Takeuchi. Therefore, Applicants assert that claim 56 is patentable over the applied references. Claims 66 and 67 recite similar distinguishing features as claim 56, and are patentable over the applied references at least in view of the remarks presented above, and further in view of their own features.

Accordingly, Applicants respectfully request that the Examiner find claims 56, 66, and 67 allowable over the applied references. Also, at least based on their dependency to claim 56, Applicants request that the Examiner find claims 57-65 allowable.

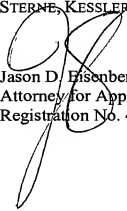
Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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